Selection of Literacy Media for Students with Visual Impairments

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Virginia Department of Education
Division of Instruction
Office of Special Education and Student Services

in consultation with

Virginia Department for the Visually Handicapped

Acknowledgements

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PREFACE

In 1995, the Virginia General Assembly amended Section 22.1-217.A., Code of Virginia, to require that for students with visual impairments, braille instruction be included in the Individualized Education Program (IEP) whenever appropriate, with the presumption that proficiency in literacy is essential for such students to achieve satisfactory educational progress.

In recent years, many educators of students with visual impairments have concluded that the teaching of braille should not be restricted to those students who have no functional vision, but that, for some students with limited vision, braille is an important supplement to print in their pursuit of literacy. However, there are a number of factors which must be considered in the decision-making process.

This document is intended to provide information to educators and parents about the reading and writing options available to students with visual impairments and to provide guidance to IEP teams as they choose the appropriate media or combination of media to assist students with visual impairment to achieve literacy. Several terms used throughout this document are described in the Glossary (Appendix A).

These guidelines were prepared with input from parents of students, as well as, individuals with visual impairments, teachers of students with visual impairments, local special education administrators, and staff members of Virginia's Department of Education and Department for the Visually Handicapped. The writing group which developed this document drew heavily from a resource document prepared by the Maryland State Department of Education. We are grateful to M. Loretta McGraw, Division of Special Education at the Maryland State Department of Education representative, for sharing their resource document with us entitled, *Selection of Reading and Writing Media for Students with Visual Impairments: A Resource Document*.

CONTENTS

I. INTRODUCTION

All students, including those with visual impairments, have the right to learn to read and write commensurate with their abilities. Appropriate choice of reading and writing media is critical to a student's ability to acquire literacy. Educational programs must provide the resources required to attain this goal. For persons with visual impairments, Braille is a versatile reading and writing medium either used alone or as a complement to print. The term, braille, as used in this document, includes other specialized braille codes (i.e., Nemeth, music code, etc.) and methods of braille production (i.e., slate and stylus, braillewriter, electronic braille, etc.) as appropriate to student needs.

Reading and writing are the critical keys to meet the literacy demands of Virginia's Standards of Learning (SOL). The Individualized Education Program (IEP) committee should be aware of the potential benefits of braille as IEP members select the appropriate reading and writing media for each student with visual impairments. For students with visual impairments to be independent and to function successfully in the community, media for reading and writing must be both portable (i.e., easy to move from place to place) and versatile (i.e., adaptable to various situations and locations). Braille and print are both portable and versatile media for reading. Likewise, the slate and stylus, the equivalent of a pen or pencil, provides a portable and versatile note taking media.

Students with visual impairments may use alternative methods for accessing written information (i.e., tape recordings, readers, closed circuit television (CCTV), computerized devices, etc.). Such devices serve as critical tools for gaining information but, alone, do not lead to literacy. While not the focus of this document, it is understood that listening skills are important because they help students access information which may not be available through other media. It is recognized that listening skills are acquired through well-planned instructional experiences. The existence of alternative methods, such as readers and technology, however, should not detract from the student's right to a truly independent personal reading and writing medium.

This resource document has been developed to serve as a set of guidelines for educators and families to promote the following outcomes:

1. Students with visual impairments will compete successfully with peers by mastering literacy skills using independent reading and writing media which maximize portability and versatility commensurate with their abilities.

2. Educators and families will collaborate to evaluate reading and writing media appropriate to the achievement of literacy.

3. Teachers will provide braille and print instruction as complements to one another whenever appropriate.

4. The IEP Committee will review, at least annually, the continued appropriateness of the reading and writing media currently being used.

5. There will be documentation used in IEP meetings that various media options were discussed to determine appropriate literacy needs (refer to Appendix B for sample documentation).

6. The necessary resources will be identified and provided to assist students with visual impairments in becoming literate.

II. FAMILY-SCHOOL COLLABORATION

Families are a vital part of the IEP committee and thus have an important role in the decision-making process. Some families may need encouragement to appreciate the importance of their own observations of their child with a visual impairment and to share these observations as part of the IEP development. It is also important to ask for student input to determine literacy preferences.

For students with visual impairments, early information and discussion can lead to timely interventions which will enhance their educational opportunities. Family discussion about the use and application of braille should begin as early as possible so that specific interventions for developing sensory motor skills can be identified and supported. This is critical to providing a foundation for reading and writing.

Family members of braille readers should be encouraged to learn the basics of braille reading and writing. These skills enable the family to support the use of braille in home and school activities. All families should be informed of resource materials on the use of braille.

III. GUIDING PRINCIPLES

Every student receiving vision services should be assessed in reading and writing media at least annually prior to the IEP review to insure that present and future needs are being met. Professionals, parents, and students must work together to assess, evaluate, and determine the most appropriate reading and writing methods and media. In this process, the IEP committee must carefully consider the possibility of future visual changes as well as future educational and vocational needs, especially during times of transition. IEP committee members should be well informed about the value of braille, especially for students with partial vision. To help ensure the availability of accurate information, a professional experienced in the teaching of braille should serve on the IEP committee.

The assessment and decision making process will vary somewhat according to the age of the student and whether the student is a pre-reader, reader, or nonreader. Programming for the preschool student should emphasize both visual and tactile skills so that observations and understanding of the student's learning style can be evaluated

When braille is selected, it may also be necessary to identify strategies which will assist the student in developing a positive attitude toward braille in order to ensure success as a braille reader. It is important that students feel proud about their braille reading ability. One possible strategy to consider is the use of peer support and role models which can occur through the introduction of the student to other students or adults who use or are learning to use braille.

The IEP Committee should keep in mind the following principles when collecting and interpreting the data from these assessments:

- Students with visual impairments often profit from knowing both print and braille.
- The reading and writing media should permit a smooth transition to employment and/or post secondary education.
- The more adaptations and modifications a student needs to use print, the greater the need for braille instruction.
- Print sizes diminish and reading demands increase as students advance in grade.
- Braille should be taught as soon as possible, when the need has been identified.
- Students learning braille should be taught to write with a slate and stylus in addition to the braillewriter.

- Some students who seem to be visual learners may increase their literacy skills by learning braille.

- The use of vision for travel is not an indicator of the appropriate reading or writing medium.

- Factors other than academic achievement should be considered when selecting the appropriate reading and writing media. Likewise, not all academic problems may be solved by the selection of appropriate reading and writing media.

- Students with other disabilities in addition to visual impairments should be afforded the opportunity to learn braille if it is appropriate, however, decisions about teaching literacy should be in line with a student s cognitive ability to learn reading and writing.

- The use of technology and readers may be beneficial to a student's education, but should not preclude reading in either braille or print.

- No one component of the assessment can stand alone as the sole determiner of the appropriate reading and writing media.

- When braille is taught, information about obtaining brailled material should also be provided.

IV. USEFUL INFORMATION FOR THE ASSESSMENT PROCESS

The following guidelines are designed to assist in the assessment of students who are readers, or who have the cognitive ability to become readers, including preschoolers. The IEP Committee must have the medical and functional vision data, and be aware of future reading needs. Other information about cognitive and affective development, learning style, and motor skills will assist in the development of appropriate individualized teaching strategies. Such information can be gathered from parents, students, and teachers (sample guiding questions are included in Appendices C and D). Assessments should be conducted in a prompt and timely manner. Reading and writing instruction in braille and/or print should never be delayed, but should be initiated as necessary.

Medical Information

Current medical Information about the eye condition should include etiology, diagnosis, prognosis, treatment, best corrected near and distance acuities, and visual fields. A low vision report may provide helpful information about: contrast sensitivity, binocularity, eye fatigue, recommended visual environment (e.g., glare reduction and illumination adjustments), ocular-motor skills, and prescribed optical and non-optical low vision devices.

Medical information about additional disabilities may be relevant. Some physical conditions and cognitive impairments may affect the student's ability to read and write. The use of medication can impact visual and/or tactual functioning.

Functional Vision Information

A comprehensive functional vision assessment will be the cornerstone of the overall assessment. In order to obtain the most complete information possible, the team should work closely with family, student, classroom teachers, and related service providers to evaluate the following factors:

Physical Factors: Working distance from page, endurance, fluctuating vision, fatigue, headache, backache, eye strain, stamina, posture, arm strength, and head position provide information on the functional use of vision.

Environmental Factors: The student's reaction to natural and artificial lighting, glare, color, and contrast sensitivity are critical to performance expectations.

Print Reading Factors: Performance demands created by print size, print style, spacing, clarity, contrast, and reading speed and accuracy, both silent and oral must be part of the total assessment.

Handwriting Factors: Legibility, pen type, and writing and reading speed and accuracy provide information concerning a student's ability to carry out functional handwriting demands.

Low Vision Technological Factors: The ability to use optical and non-optical aids (for example, CCTV and hand-held magnifiers) and other support mechanisms provide further data concerning a student's functional vision.

NOTE: In evaluating pre-readers, including preschoolers, more emphasis should be placed on the physical and environmental factors plus available medical information.

Projected Reading and Writing Needs

A thorough assessment of reading and writing needs will help determine how a student will function in upcoming years as print size diminishes and reading demands increase. The appropriate reading and writing media should provide for effective personal communication and full participation in community, vocational, and social settings.

Educational Information

Cognitive Development: A student's concept development; visual, tactual and auditory discrimination; perceptual process; and language development should be evaluated to determine how the student is functioning relative to peers in the areas of reading and writing.

Affective Development: Consideration of socialization skills, recreational and vocational interests, plus motivation for learning will help the IEP Committee gain insight into how the student's affective development is impacting the ability to perform general educational and specific visual tasks over time.

Fine Motor Skills: Consideration should be given to the student s current tactual awareness and discrimination, hand and finger dexterity, finger isolation, finger touch, finger strength, and page turning ability. These aspects of physical development assist in selecting strategies for teaching reading and writing, either print or braille.

Current Education/Development Performance: Information about how the child is progressing in their current instructional setting will help the IEP committee with decisions about reading and writing needs.

V. DECISION MAKING PROCESS

The IEP committee s decision to teach braille, print, or both will take into consideration all of the information gathered during the assessment. The assessment information will help the IEP team select from among the following options. Students may be taught to use:

1. Braille

2. Print

3. Braille, complemented with print

4. Print, complemented with braille

The remainder of this section provides examples of the kinds of assessment data that will assist a team in choosing one of the four options. Of course, assessment descriptions provided below are somewhat generic, i.e., not all parts of the descriptions will apply to each student. Since students are individuals, everyone will not fit neatly into one of the four categories. In reviewing these descriptions, team members should ask which factors best describe the individual student.

It is also important to remember that when the selected option includes both print and braille, the amount of usage with one or the other will vary with each student. Student input should be obtained so that the team decision is sensitive to student preference and concerns. Additionally, as a student's vision or visual demands change over time, the usage of one medium over another may change.

However, even though a student may use one medium more than another at a given point in time, the student may benefit from instruction in both media to enhance proficiency. For the preschool student, this will mean that opportunities for visual and tactual activities are provided equally. Later, the amount of time teaching or practicing with a certain medium will depend on all assessment data and the current needs of the student. The team must continually focus on the ultimate outcome that the student will be able to choose and use the medium of preference or the medium most functional for a given situation. All media have advantages and disadvantages which IEP Committee should be aware of when discussing expectations for student progress.

Examples of Factors to Consider

Students Who may Benefit from Learning Braille

Medical Factors: Student is totally blind, nearly so, or is expected to experience rapid loss of vision.

Physical Factors: An additional disability does not interfere with the ability to learn braille.

Environmental Factors: Adjustments in natural and artificial lighting do not enhance student ability to read print.

Print Reading Factors: If the student can read print at all, reading is extremely slow and laborious, even when all print factors have been adjusted for maximum efficiency.

Handwriting Factors: Student cannot read own handwriting or carry out functional handwriting demands.

Low Vision Technological Factors: Student cannot read print at any comfort level, even using a CCTV or other non-portable devices.

Students Who may Benefit from Learning Print

Medical Factors: Student has a stable eye condition, or has a prognosis of continued improvement.

Physical Factors: Student experiences no fatigue or discomfort from reading. The nature of an additional disability prohibits tactual reading. Student, when systematically assessed is unable to process tactual information with accuracy.

Environmental Factors: Student does not require significant modifications in order to read comfortably and for extended periods of time.

Print Reading Factors: Student reads regular print comfortably and efficiently. Reading rate and accuracy is commensurate with student's expected grade level. Performance level is commensurate with overall ability. Student can access print easily for all academic, nonacademic, and vocational needs.

Handwriting Factors: Student has legible handwriting and can easily read own and others notes at a comfortable distance, even after some time has elapsed.

Low Vision Technological Factors: Student reads regular print without low vision devices and comfortably uses pocket-size magnification for reading fine print, such as the telephone book, medicine labels, dictionary, and encyclopedia.

Students Who may Benefit from Learning Braille Complemented With Print

Medical Factors: Student has diagnosis or prognosis of severe visual impairment, has degenerative eye condition, or has severely restricted visual fields.

Physical Factors: Student holds book close to face, can read only large print, or regularly suffers from headaches, fatigue, or visual discomfort after reading. Student exhibits strong preference for tactual exploration and learning. Student can read using an electronic low vision aid, but with effort; cannot read with hand-held magnifiers with any reasonable speed or comprehension. Student is consistently unable to complete assigned school work independently and in a timely manner.

Environmental Factors: Glare and/or lighting variations make reading difficult or impossible in many settings.

Print Reading Factors: Student's print reading speed is far below that of other students of the same developmental level. Student consistently demonstrates inaccuracy when reading. Student has difficulty in reading a variety of print styles or print on colored background.

Handwriting Factors: Student can only read notes when written with a broad tip pen 1-2 inches high and may have difficulty accurately reading what was written, or can only read notes using a CCTV or other non-portable devices.

Low Vision Technological Factors: Student can write only when using a CCTV or other non-portable device.

Students Who may Benefit from Learning Print Complemented With Braille

Medical Factors: Student has a currently stable eye condition but is at risk of eventual deterioration, has a slowly progressive eye condition, has restricted visual fields, or has fluctuating vision.

Physical Factors: Student posture during reading results in back and neck strain or headaches. Student complains of watering eyes, blurring, or other visual

discomfort after extensive reading or writing tasks. Student cannot complete assignments without relying on other individuals or technology for reading and/or note taking.

Environmental Factors: Glare and/or lighting variations make reading difficult or impossible in some settings.

Print Reading Factors: Student cannot read regular print, easily and accurately, for an appropriate length of time in order to complete tasks throughout the day. Student may read material in both regular and large print formats. Student reads primarily in large print format combined with optical or electronic low vision devices. Student is unable to maintain a reading rate commensurate with grade level work demands. Student depends on extremely large print for accessing practical information such as oral report notes, grocery list, names and addresses, etc. In preschool, observations should include how a student approaches learning, i.e., a visual versus tactual approach.

Handwriting Factors: Student has difficulty producing and reading own or reading others handwriting.

Low Vision Technological Factors: Student may use CCTV or other non-portable devices for visual materials such as maps and diagrams.

VI. REFERENCES AND RESOURCES

Caton, Hilda (Ed.) 1991. *Print and Braille Literacy: Selecting Appropriate Learning Media*. American Printing House for the Blind, Louisville, KY

Caton, Hilda (Ed.) 1994. *Tools for Selecting Appropriate Learning Media*. American Printing House for the Blind, Louisville, KY

Curran, E.P. 1988. *Just Enough to Know Better*. Boston: National Braille Press.

Hazekamp, J. & Huebner, K.M. 1989. *Program Planning and Evaluation for Blind and Visually Impaired Students: National Guidelines for Educational Excellence*. American Foundation for the Blind, New York, NY.

Heydt, K., Clark, M.J., Cushman, C., Edwards, S., & Allon, M. (1992). *Perkins activity and resource guide*. Watertown, MA: Perkins School for the Blind. (includes a section on students with multiple disabilities who may benefit from learning functional Braille skills).

Journal of Visual Impairment & Blindness. May-June 1996. *Special Issue on Literacy*. Vol.90, No.3.

Koenig, A. And M.C. Holbrook, 1993. *Learning media assessment of students with visual impairments*. Texas School for the Blind and Visually Impaired, Austin, TX.

Maryland State Department of Education, Division of Special Education. December 1992. *Selection of Reading and Writing Media for Students with Visual Impairments: A Resource Document.*

South Carolina Department of Education. 1994. *South Carolina Assessment for Determining Appropriate Literacy Media and for Evaluating Braille Skills*. Columbia, SC.

Spungin, Susan J. 1990. *Braille Literacy: Issues for Blind Persons, Families, Professionals, and Producers of Braille.* American Foundation for the Blind, New York, NY.

Swallow, R. M., S. Mangold, and P. Mangold. 1978.*Informal Assessment of Developmental Skills for Visually Handicapped Students.* American Foundation for the Blind, New York, NY.

United States Department of Education, Office of Special Education and Rehabilitative Services. *Memo to Chief State School Officers OSEP 96-4, November 3, 1995. Policy Guidance on Educating Blind and Visually Impaired Students.* Washington, DC.

Virginia Department for the Visually Handicapped. January 1997. *Draft Braille Curriculum Guide.* VA Department for the Visually Handicapped, Richmond, VA.

Virginia Department for the Visually Handicapped and VA Department of Education. *What is Braille?: Virginia s Braille Awareness Guide.* VA Department for the Visually Handicapped, Richmond, VA.

Virginia Department of Education, *Access to the Curriculum: Passage to the Standards of Learning for Students with Disabiltiies.* May 1996. Richmond, VA.

Virginia Department of Education. *Regulations Governing Special Education Program for Children with Disabilities in Virginia, January 1994.* Richmond, VA.

Virginia Department of Education (February 25, 1997). *A General Description of the Stanford 9 Subtests and Accommodations Mastrix for Students with Disabilities.* Office of Special Education and Student Services, Richmond, VA.

Virginia Department of Education (February 25, 1997, approved by the Board of Education). *Guidelines for Virginia State Assessment Program and Standards of Learning for Students with Disabilities.* Office of Special Education and Student Services. Richmond, VA.

Virginia School Laws, 1996 Edition. Code Section 22.1-217, *Visually Impaired Children.*

Willoughby, Doris M. and Sharon L. M. Duffy. 1989. *Handbook for Itinerant and Resource Teachers of Blind and Visually Impaired Students*. National Federation of the Blind, Baltimore, MD.

Organizations

American Council of the Blind or Braille Authority of North America, 1155 15th Street NW Suite 720, Washington, DC 20005 (800) 424 8666 or (202) 467-5081

American Foundation for the Blind, 15 West 16th Street, New York, NY 10011 (212) 502-7600 or (800) 232-5463

American Printing House for the Blind, 1839 Frankfort Avenue, P.O. Box 6085, Louisville, KY 40206 (502) 895-2405 or (800) 223-1839

Braille Institute of America, 741 N. Vermont Avenue, Los Angeles, CA 90029 (800) Braille or (213) 663-1111

Council for Exceptional Children, Division for the Visually Handicapped; 1920 Association Drive, Reston, VA 22091 (703) 264-9494

Library of Congress National Library Service for the Blind and Physically Handicapped, 1291 Taylor Street, NW, Washington, DC 20542 (800) 424-8567 or (202) 707-5100

National Association for Parent of the Visually Impaired, Box 317, Watertown, MA 02272 (617) 972-7441 or (800) 562-6265

National Braille Association, 1290 University Avenue, Rochester, NY 14607 (716) 473-0900

National Braille Press, 88 St. Stephen Street, Boston, MA 02115 (617) 266-6160

National Federation of the Blind, 1800 Johnson Street, Baltimore, MD 21230 (301) 659-9314

National Organization of Parents of Blind Children, 1800 Johnson Street, Baltimore, MD 21230 (410) 659-9314

Recording for the Blind and Dyslexic, 20 Roszel Road, Princeton, NJ 08540 (800) 221-4792 or (609) 452-0606

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Appendix A

GLOSSARY

For the purposes of this document, the following terms have the meanings indicated:

Affective: Relating to feelings or emotions.

Binocular Vision: The ability to use both eyes simultaneously to focus on the same object and to fuse the two images into a single perception.

Braille: As officially approved (Braille Authority of North America), it comprises two grades. Grade 1 braille is in full spelling and consists of the letters of the alphabet, punctuation, numbers, and a number of composition signs which are special to braille. Grade 2 braille consists of Grade 1 and 189 contractions and short-form words. In this document, "braille" refers to Grade 2 braille.

Closed Circuit Television (CCTV): A CCTV is a low vision aid that projects an enlarged image on a screen through projection magnification.

Cognitive Skills: Intellectual processing abilities.

Contrast Sensitivity: Ability to detect detail having subtle gradations in grayness between test target and background.

Complementary Medium: An additional medium that is often appropriate, reduces fatigue, increases efficiency, and eases completion of specific tasks.

Etiology: The cause or origin of a disease or abnormal condition.

Functional Vision: Residual vision which can be used to complete reading and writing tasks.

Illumination Adjustment (Light Adaptation): The power of the eye to adjust to bright light levels.

Large Print: Material that is enlarged to 14 point size or larger.

Literacy: An individual's ability to read and write.

Low Vision Aids and Devices: Optical devices of various types useful to persons with visual impairments. Magnifiers, monoculars, lenses, hand-held telescopes, and prism lenses are examples of low vision devices.

Media: Organized communication systems which permit a student to access, gather, and disseminate information.

Medical Condition: Any medical abnormality which adversely affects student performance in reading and writing.

Nemeth Code: Mathematical braille code used in performing arithmetical computations and mathematical problem solving.

Photophobia: Abnormal sensitivity to, or discomfort from, light.

Prognosis: Predicted outcome of the medical condition.

Regular Print: Material which has not been enlarged for use by students who are visually impaired.

Sensorimotor Skills: Skills and performance required in the development and coordination of sensory input and motor coordination output.

Slate and Stylus: Two tools used by hand to write in braille. A slate is a metal plate used to hold paper for hand brailling. A stylus is an instrument held in the hand and used to press braille dots on the paper held by the slate.

Visual Acuity: Sharpness of vision with respect to the ability to discriminate detail.

Visual Fatigue: the inability to read and write efficiently and comfortably for the entire academic day, during home work time, and still have enough energy to enjoy social activities. The level of fatigue can fluctuate throughout the day.

Visual Field: The entire area that can be seen without shifting the gaze.

Visual Impairment: (as defined by *Regulations Governing Special Education Programs for Children with Disabilities in Virginia, 1994*) means an impairment in vision that, even with correction, adversely affects a child s educational performance. The term includes both partial sight and blindness.

Appendix B

SAMPLE IEP ATTACHMENT
DOCUMENTATION OF MEDIA DISCUSSED BY IEP COMMITTEE

Since the discussion about literacy media selection is a function of the IEP process, this sample format is intended to help educators document that discussion. The form itself can be modified, adapted, or the information could be incorporated in the school system s IEP format.

Name of Student: _____

Date of IEP Meeting: _____

The following literacy media options were considered as follows:

____ Braille
Comments:

_____ Print
Comments:

_____ Braille, complemented with print
Comments:

_____ Print, complemented with braille
Comments:

RECOMMENDATIONS AND RATIONALE:

Appendix C

QUESTIONS FOR FAMILIES AND STUDENTS

The questions listed below are examples to help the family/student contribute valuable information. Not all questions are appropriate for each student. Some questions address all students, some preschoolers or prereaders, and some address older students. They have been written for the parents/guardians; however, the wording can be easily changed to be used with students. It is important to remember that each student is unique, with different perceptions, strengths, and needs. The teacher must be sensitive and aware of these so that families and students will feel comfortable giving their impressions and information. The teacher can paraphrase these questions in discussions with families.

Medical Factors

- What do you know about the diagnosis and prognosis of your child's eye condition?
- What was the age of onset?
- Are there any other family members with the same condition?
- Have you observed any changes in the visual functioning of your child?
- Have there been any changes in the visual acuity or visual field?
- What other medical conditions does the child have?

Functional Vision Information

Physical Factors

- How close does your child hold a book or picture to his/her face?
- How long can your child read at one sitting without fatigue or pain?
- Does your child squint, tilt his/her head, or get into other unusual positions while reading, writing, looking at a book, or picture on television?
- Does your child complain of headaches, eye fatigue, or other physical discomforts? What seems to bring on these complaints?

Environmental Factors

- Does your child take a book to a special place in the home to look at or read it?

- Does your child show a difference in visual functioning according to the time of day, seasonal changes, environmental changes (rainy day versus sunny day, going from a dark room to the outdoors, etc), lighting conditions, etc.

Print Reading Factors

- Does your child read regularly?

- Does your child pretend to read?

- Is your child interested in books, in pictures?

- Does your child avoid reading for school or pleasure?

- After school hours, does someone read school work to your child? Recopy handouts or texts? How much time is spent on these tasks on an average day or week?

Handwriting Factors

- Is your child interested in using crayons or pencils?

- Can your child read his/her own handwriting, especially after a few days or weeks have passed?

Low Vision Technological Factors

- Does your child use any low vision devices at home?

Projected Reading and Writing Needs

- What are your future expectations for your child?

Educational Information

Cognitive Development

- Does your child examine objects visually and/or tactually?

- Does your child appear to see some colors more easily than others?
- Does your child have a preference for certain colors, color combinations?
- Does your child have difficulty identifying any colors?
- How does your child select books?
- How well does your child interpret pictures, maps, graphs, etc.? Does he/she ignore them, enjoy them, ask for help in interpreting them, find them frustrating, etc.?
- Does your child have trouble with spelling and/or punctuation?

Affective Development

- Does your child pretend to "see" in order to please others?
- Is your child interested in television? How close does he/she sit?
- Does he/she seem to listen to it more than look at it?
- What are your concerns/priorities for your child?
- What resources have you used?
- Does your child indicate awareness and understanding of their visual impairment? And express their feelings about it?

Appendix D

QUESTIONS FOR TEACHERS OF STUDENTS WITH VISUAL IMPAIRMENTS

The following are some sample questions for teachers to use in order to help gather information for selecting reading and writing media. They are **not all-inclusive** of the kinds of data which should be collected for a full assessment as they are limited to those factors which directly affect reading and writing needs.

Medical Factors

- What is the diagnosis of the visual impairment and prognosis?
- What was the age of onset?
- What is the visual acuity (near and distant)?
- Is there visual field loss, and to what degree?
- Does the student have photophobia?
- Does the student have an additional disability?

Physical Factors

- Does the student have a preferred field of view?
- Can the student visually track vertically?
- Can the student visually track horizontally?
- Can the student tactually track vertically?
- Can the student tactually track horizontally?
- Does the student exhibit smooth, steady eye movement?
- Can the student discriminate colors?
- Does the student demonstrate head tilt, move body to material, or move material to body?
- Does the student exhibit unusual posture?

- What is the working distance from the page?

- Does the student require preferential seating?

- Does the student demonstrate visual fatigue at any time during the day?

- Does the student complain of headache, backache, eye strain, or lack of stamina, or blink excessively or squint?

- Does the student's ability to use vision efficiently fluctuate?

Environmental Factors

- How does the student locate objects on desk or table?

- Does lighting affect the student's ability to function in the classroom? Consider effects of the following:

    Glare
    Indoor/outdoor lighting
    Direct/indirect lighting
    Weather
    Time of day
    Dimness/Brightness

- Is the student able to read the chalkboard? And, at what distance? Consider the following:

    Color of chalkboard;
    Color of chalk used by the teacher;
    Does the student complain of an inability to read the board when there is glare?
    Is the student affect by the amount of written material, spacing of words, or cursive or manuscript writing?
    Is the board clean?

- Can the student effectively benefit from instructional materials and equipment generally used in the classroom? Consider the following materials and equipments:

    Filmstrip
    Movie projector
    Television
    Overhead projector
    Flipcharts
    Computers

Print Reading Factors

- Can the student discriminate size, shape, outlines?

- Does the student exhibit difficulty in perceiving:

    Closure?
    Form constancy?
    Figure ground?

- Does the student frequently lose place when reading? Consider:

    Does the student skip lines when reading?
    Does the student skip words and whole phrases when reading which are not attributable to a reading problem?
    Does the student accommodate for visual field loss when reading?

- Does the student have difficulty with print due to:

    Contrast?
    Size of print?
    Thickness of print?
    Spacing?
    Font (type style)?

- Is the student able to maintain a reading rate commensurate with cognitive ability and/or grade level work?

    Orally?
    Silently?

- Does the student require extra time in the classroom in order to:

    Find pages of text?
    Find material on chalkboard?
    Compare material from text to text?
    Alternate between text and paper efficiently?
    Transfer material from chalkboard to paper?
    Successfully complete transition from one reading or writing activity to another?
    Complete tests?
    Complete writing assignments?

- Does the student exhibit difficulties with spelling, punctuation, and paragraphing which are not attributable to cognitive or other non-visual factors?

Handwriting Factors

- Can the student read own handwriting?

    After a few minutes?
    After a few hours?
    After a number of days?

- Can the student write within prescribed boundaries?

- Does the student require a specific pen type for readable handwriting?

- Is special paper needed?

- Is the writing speed and ability to read it back significantly slower than that of peers?

Low Vision Technological Factors

- Does the student depend on adaptive materials or equipment?

    Enlarging equipment such as Closed Circuit Television (CCTV)?
    Enlarged text?
    Magnifiers?
    Reduced print size to accommodate for visual field loss?
    Filter papers?
    Xerox copies versus ditto copies?
    Adaptive writing materials paper, pencils, pens, markers, reading stand?
    Speech output?